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10/087,235

02/28/2002

Mike X. Ouyang

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09/14/2004

VOLENTINE FRANCOS, PLLC  
SUITE 150  
12200 SUNRISE VALLEY DRIVE  
RESTON, VA 20191

EXAMINER

SONG, SARAH U

ART UNIT

PAPER NUMBER

2874

DATE MAILED: 09/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/087,235

**Applicant(s)**

OUYANG ET AL.

**Examiner**

Sarah Song

**Art Unit**

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 August 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) 1-13 and 24-35 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 14-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election of claims 14-23 in the reply filed on August 13, 2004 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. Claims 1-13 and 24-35 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected inventions, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on August 13, 2004.

### *Drawings*

3. The proposed drawing changes submitted on July 23, 2002 are approved. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any

Art Unit: 2874

required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Objections***

4. Claim 22 is objected to because of the following informalities: Claim 22 is objected to as depending from method claim 1. It appears that claim 22 should depend from claim 14 and will be examined accordingly.

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. **Claims 14-20 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by**

**Adams et al. (U.S. Patent 6,181,852).**

7. Regarding claim 14, Adams et al. discloses an optical element (fiber Bragg grating, column 6, line 38) comprising at least one layer having a substantially radially uniform thickness disposed about the optical element (column 6, lines 43-48).

8. Regarding claim 15, the optical element is a fiber (column 6, line 38 and 47).

9. Regarding claim 16, the at least one layer is chosen from a metal (e.g. gold, column 6, line 46).

10. Regarding claim 17, one of said at least one layers is an adhesion layer (column 6, line 45-46).

Art Unit: 2874

11. Regarding claim 18, the adhesion layer is Ti (titanium, column 6, line 45-46).
12. Regarding claim 19, the metal includes Au (gold, column 6, line 46).
13. Regarding claim 20, it is noted that the claim further defines the piezoelectric material to be selected from a group. However, claim 20 does not further limit the at least one layer of claim 16 to be a piezoelectric material. Therefore, claim 20 does not require a piezoelectric material, since the layer may also be chosen to be a metal according to claim 16 from which it depends. Since Adams et al. discloses the at least one layer is chosen from a metal thus anticipating claim 16, Adams also anticipates claim 20.
14. Regarding claim 23, the optical fiber is a fiber Bragg grating (column 6, line 38).
15. **Claim 14 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Rogers, Jr. et al. (U.S. Patent 5,135,554).**
16. Regarding claim 14, Rogers, Jr. et al. discloses an optical element comprising at least one layer having a substantially radially uniform thickness disposed about the optical element (column 6, lines 17-21 and 52-55; column 7, lines 1-2).
17. Regarding claim 22, Rogers, Jr. et al. discloses said thickness to be 5.2  $\mu\text{m}$  which is "in the range of approximately 1  $\mu\text{m}$  to approximately 100  $\mu\text{m}$ ", and therefore meets the claimed limitation.

***Claim Rejections - 35 USC § 103***

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

19. **Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rogers, Jr. et al.**

20. Regarding claim 21, Rogers, Jr. et al. discloses a variation of 6% in thickness (column 6, lines 17-21), which is equivalent to a radial thickness uniformity of 94%.

21. Rogers, Jr. et al. does not expressly disclose a radial uniformity in the range of approximately 95% to approximately 99%.

22. However, it is noted that the term "approximately" allows for uniformity slightly less than 95%, such as 94%. Also, Examiner notes that Applicant does not teach that a uniformity of specifically 95% solves any stated problem, or is for any particular purpose. Thus, it appears that the coating having a uniformity of 94% would perform equally well.

23. Furthermore, since the disclosed uniformity is very near the claimed range, a prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. See MPEP 2144.05(I).

24. Therefore, the uniformity of 94% disclosed by Rogers, Jr. et al. renders obvious the recitation for "uniformity in the range of approximately 95% to approximately 99%" as claimed.

### ***Conclusion***

25. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Jen et al. (U.S. Patent 5,135,295) discloses an optical fiber having a coating of a piezoelectric material, wherein said piezoelectric material includes PZT (see Abstract).

Chamberlain et al. (U.S. Patent 6,411,746) also discloses a metal-coated optical element having a substantially uniform radial thickness (see Abstract).


Art Unit: 2874

26. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sarah Song whose telephone number is 571-272-2359. The examiner can normally be reached on M-Th 7:30am - 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on 571-272-2344. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Sarah Song  
Patent Examiner  
Group Art Unit 2874